
WEATHER INFORMATION USE SURVEY

The survey concerning the use of weather data by certain agencies of the State of Arizona was intended to assess their need and use of such data to support daily activities. A total of 13 surveys were distributed and 11 forms were returned. The responses are summarized in Exhibit E-1 from which the following observations may be made:

A review of the survey responses indicates that about one-half of the agencies responding utilize weather data to carry out their mission. (Question 1).

Their use of the data is essentially limited to internal activities; only one agency makes the data available to the public. A majority apply the weather data to decide on travel routes and scheduling. Other responses to this question relate to emergency purposes. (Question 2).

Questions 3 and 4 are related in that they inquire as to the type of weather data which is desired and the users' ability to obtain that information. The majority of the respondents were interested in the physical characteristics of the weather phenomenon (for example, wind speed, type of precipitation, identification of a thunderstorm event) rather than their impact on facilities (pavement surface, river and stream levels, as examples). Importantly, most of the respondents were able to obtain the data of interest to them.

The means by which the users obtain the data is less varied. Most of the eight respondents to this question employ more than one source with a preference for obtaining direct observations which are communicated by voice or by modem to a computer network for retrieval on demand. The use of radio/television announcements also appears to be a common means for data acquisition. One respondent indicated use of the Internet. (Question 5).

Of the eight respondents to Questions 6 and 7, six expressed a need for obtaining weather data on a real-time basis. These same respondents had a range of frequency update for the data. One preferred the data on a per minute basis during the early hours of the day while others use the data at specific times/reasons. The overriding factor, however, is that there is a strong preference for obtaining real-time data when the report is required.

Question 8 seeks to identify opportunities to use weather and condition data to support efficiency and enhance safety. The six respondents presented such insights as to monitor severe weather movement and offer available data as a service to motorists entering Arizona year-round, particularly during the winter season and at the Grand Canyon. Emergency response/readiness was also suggested.

Responses to Question 9 imply that these State agencies could benefit from the availability of real-time weather and condition information. However, their willingness to share in the costs of delivering this capability (Question 11) was mixed. Of the 10 respondents to this question, a total of 3 indicated a preference to participate financially, either on a cost share basis with ADOT Aeronautics Division or on a user fee basis. Two other respondents provided conditional comments ("depends" or "maybe") to either option. The other five respondents were not inclined to participate financially in a statewide real-time weather network on either basis.

Question 10 was intended to determine how the surveyed agencies use aircraft in conducting their mission. Ten of the 11 agencies responded and the results were equally divided. Of those using aircraft, activity levels ranged from between 10 to 50 flight hours per year and 50 to 9,000 hours annually. Flight purposes included air rescue and support, aerial survey/patrol and aerial observation/survey.

The last survey question (Question 12) solicited additional comments and four respondents expressed that:

- Weather data is useful when responding to complaints related to the application of pesticides.
- The State Emergency Notification (system) is sufficient; however, additional information should not be overlooked.
- The Division of Emergency Management has access to real-time weather data from the NOAA and NWS.

In summary, the State agencies contacted and responding indicated that they use weather data in their daily activities and could benefit from access to a real-time source. The ability to establish, operate and maintain a weather network on a cost-share or user fee basis is possible, but should be subject to more investigation. The potential intermodal application of weather data was recognized by one respondent and this observation could be used as a feature in a statewide weather data network.

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ADOT, Aeronautics Division is evaluating the need and use of weather data in order to enhance flight safety and user operations. Please respond to the following questions and return the survey in the pre-addressed and stamped envelope. All responses will be aggregated.

1. Do you use weather information in conducting your daily State business activities?

6 Yes If Yes, continue to Question 2
4 No If No, skip to Question 8

2. How do you use the weather and condition information you are presently obtaining?
 (Check all that apply)

2 Weather forecasting
2 Manpower planning (e.g. snow plowing)
1 Provide as a public service
3 Provide to own staff on their request
2 Provide to own staff on periodic basis
0 To decide whether and when to open or close
5 To select travel routes and scheduling
5 Other (please specify) Flight Go/No-Go Decision (1) Fire Severity Planning (1) Emergency Response (1)
Lightning Activity (1) Moisture/Wind Information (1)

3. What types of weather and condition information are useful to you?
 (Check all that apply)

<u>7</u> Wind speed and direction	<u>4</u> Cloud cover and front location
<u>7</u> Temperature	<u>6</u> Thunderstorm
<u>5</u> Barometric pressure	<u>6</u> Lightning
<u>4</u> Dew point	<u>2</u> Soil temperature/moisture
<u>7</u> Type of precipitation	<u>0</u> Pavement temperature
<u>7</u> Amount of precipitation	<u>2</u> Pavement surface conditions
<u>4</u> Ceiling height	<u>2</u> River/stream levels
<u>5</u> Forward visibility	<u>2</u> Snow pack depth
<u>6</u> Freezing level	
<u>0</u> Other (please specify) _____	

4. Can you now obtain the weather and condition data you would like to have?
 (Indicate Yes or No for each weather product)

<u>7</u> Wind speed and temperature	<u>5</u> Cloud cover and front location
<u>8</u> Temperature	<u>5</u> Thunderstorm
<u>5</u> Barometric pressure	<u>4</u> Lightning
<u>3</u> Dew point	<u>3</u> Soil temperature/moisture
<u>6</u> Type of precipitation	<u>3</u> Pavement temperature
<u>6</u> Amount of precipitation	<u>3</u> Pavement surface conditions
<u>5</u> Ceiling height	<u>3</u> River/stream levels
<u>4</u> Forward visibility	<u>3</u> Snow pack depth
<u>4</u> Freezing level	
<u>0</u> Other (please specify) _____	

5. How do you presently obtain the weather and condition data you monitor?
 (Check all that apply)

5 By radio/telephone, direct from an observer
2 By telephone using a recorded message
5 By computer with modem
1 By facsimile machine
4 Listening/watching the radio/television
2 Satellite download to a monitor
0 Purchase products/services from a private, commercial vendor
0 Other (specify) _____

6. Is the weather and condition data you obtain provided on a real-time (up to the minute) basis?

3 Yes, it needs to be for my operations
0 Yes, but real-time reporting is not required for my operations
3 No, but it should be to be useful for my operations
2 No, and it does not need to be on a real-time basis for my operations
0 Am unsure if the data received is being provided on a real-time basis

7. How frequently do you monitor the weather and conditions?

1 Every minute between the hours of 12 a.m. and 12 p.m.
2 Every hour between the hours of 5 a.m. and 7 a.m.
3 Times daily at 0700 1800 (indicate clock hours)
2 Times daily at 0600 1200

8. Can you name any instances when the availability of real-time (up to the minute) weather information would save you time, money, and/or life resources? (Please describe)

*Emergency Response Operations (1) Rural AZ Flight Operations (1) Welcome Center at I-40 (1)
Progress of Thunderstorm Movement, Lightning Activity, Precipitation Patterns and Weather Movement (2)*

9. Would the availability of automated, real-time weather and condition information at locations across the State of Arizona be of value to you?

9 Yes
2 No

10. Does your agency utilize nonairline aircraft in conducting its activities? If Yes, for which purposes and how many flights and hours are flown in aircraft annually?

<u>5</u> No	<u>5</u> Yes	<u>40 - 50</u> Annual flights	<u>2</u> Annual hours
		<u>50 - 300</u>	<u>1,000</u>
		<u>?</u>	<u>9,000</u>
		<u>?</u>	<u>3,000</u>

Purposes Emergency Response and Damage Assessment (1) Air Rescue/Support/Executive Transport (2)
Wildlife Suppression Airborne Relief Act (1) Administrative Purposes (1)

11. ADOT, Aeronautics Division is studying the technical and financial feasibility of a statewide real-time weather information system. There is also the likelihood that this data will be linked linked to the national weather network. Would you be willing to pay a user fee or otherwise participate financially in the establishment and maintenance costs for such a system?

2 Yes, on a cost sharing basis with Aeronautics and other users.
4 Yes, on a user fee basis. A suggested user charge is \$ 0.90 (Average) per contact.
5 No, not on a cost sharing basis with Aeronautics and other users.
5 No, not a user fee basis.

12. Thank you for your participation in this survey. Please use the space below to provide any additional comments concerning the topic of real-time weather information systems.

13. Please identify the respondent to this survey:

Name _____
Agency _____
Address _____
Telephone _____

Please return this survey form in the pre-addressed and stamped envelope to:

QED
P.O. Box 174
Ridgefield, CT 06877